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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,788	08/29/2001	Yuji Ono	011075	4613

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EXAMINER

PERRIN, JOSEPH L

ART UNIT PAPER NUMBER

1746

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/940,788	ONO ET AL.	
	Examiner	Art Unit	
	Joseph L. Perrin, Ph.D.	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. In response to applicant's response filed 15 June 2005, the status of the application is as follows:
2. Applicant's arguments regarding the first rejection under 35 U.S.C. §112, second paragraph, are persuasive in view of the amendment to the preamble. Regarding applicant's comments that "[t]he preamble is a statement of purpose or utility of the recited invention", the Examiner agrees. Thus, positively reciting a cleaning method without the recitation of a cleaning step raised the question of indefiniteness. Applicant's amendment to the preamble addressed this issue.
3. Applicant's arguments regarding the rejection under 35 U.S.C. §112, second paragraph have been fully considered but they are not persuasive. In response to applicant's argument that the "missing element" in a method claim would generally be a missing step, it is noted that the method positively recites structural elements and while the rejection is for omitting a "missing element" in the recited structural elements of the method step, it is clear that this can also be construed as a "missing step" since the step is essentially incomplete for omitting a structural element positively recited as part of the method step. In either interpretation of the rejection, it is clear that the omission of a "missing element" resulted in the indefinite rejection. In response to applicant's argument that "the specification never states that gas injection section 30 is 'essential'", this is not persuasive because applicant has not provided any showing of how the

original disclosure provides a baffle plate which is capable of causing inert gas supplied along the upper face of the baffle plate to turn around the outer peripheral edge of the plate and pass through injection openings of a bottom plate without the gas injection section 30. The absence of such disclosure also potentially raises the question of scope of enablement since applicant's original disclosure does not disclose such inert gas flow without the gas injection section, i.e. with only the baffle plate. Accordingly, since the gas injection section is required to provide such gas flow, the gas injection section is considered an omitted "essential" element of the positively recited structure in the method step.

4. Applicant's arguments regarding the rejection under 35 U.S.C. §103 over CADY and OMSTEAD have been fully considered but they are not persuasive. In response to applicant's arguments that OMSTEAD achieves "uniform process gas flow" and "does not achieve [where the amount supplied at the outer peripheral portion is larger than at the center]", this is not persuasive because CADY achieves this limitation. The combination of the baffle/deflector plate of OMSTEAD would only enhance this effect. It is noted that applicant's purpose for using the baffle plate is because it "prevents the [inert gas] from directly flowing to the center of the supply port" (page 17, lines 8-11 of applicant's original disclosure). One of ordinary skill in the art at the time the invention was made would immediately recognize that Figure 2 of OMSTEAD clearly achieves this purpose. Moreover, one of ordinary skill in the art would further recognize that such baffle provides a uniform process gas flow by preventing the gas from directly flowing to the center of the supply port (the absence of the baffle would not provide a uniform gas

Art Unit: 1746

flow). It is further noted that the Figure 2 of OMSTEAD and Figures 2-3 of applicant's drawings each show a showerhead arrangement with a baffle plate located therein which prevents gas from directly flowing to the center of the supply port.

5. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "where all of the injection openings are directly between the baffle plate and the wafer" (emphasis added)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: hollow gas injection section (reference numeral 30) with baffle plate (reference numeral 35) interposed therein. The baffle plate being interposed in the hollow gas injection section is considered an essential element due to such structure required to enable gas to be directed the outer peripheral edge of the baffle plate and pass through the bottom plate of the gas injection section.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over CADY (previously cited) in view of U.S. Patent No. 6,190,732 to OMSTEAD et al. (hereinafter "OMSTEAD"). CADY discloses the claimed invention of a method including spin drying a wafer while flowing inert gas, such as nitrogen, to the face of the wafer (see entire reference of CADY, for instance, Figures 1-2, col. 3, lines 38-49, and col. 4, lines 48-56). CADY also discloses the sealed drying space 40 is sealed for "removing any entrained and undesirable gases or contaminants", and supplying inert gas such that the gas supply at the outer peripheral portion is larger than that of the center portion (see entire reference, for instance, col. 7, lines 44-58, and Figures 6-8B, respectively). Although CADY does disclose (for instance, in Figures 8A-B) a hollow gas showerhead configuration and supplying inert gas such that the gas supply at the outer peripheral portion is larger than that of the center portion, CADY does not disclose a baffle plate redirecting gas around the outer periphery of the baffle late and to a bottom plate with injection openings. OMSTEAD teaches that it is known in the semiconductor processing art to provide a baffle plate (deflector plate 38) in a center portion of a hollow gas showerhead (housing 20) to better disperse gas through the housing (see, for instance, col. 9, lines 1-15 & Figure 2). Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated

Art Unit: 1746

to modify the gas showerhead of CADY with the baffle plate of OMSTEAD to better disperse gas to the outer periphery of the gas showerhead. Moreover, one of ordinary skill would immediately recognize that such an arrangement would also prevent gas from directly flowing through the center portion of the gas showerhead onto the wafer.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

11. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (571)272-1305. The examiner can normally be reached on M-F 7:00-4:30, except alternate Fridays.

Art Unit: 1746

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph L. Perrin, Ph.D.
Primary Examiner
Art Unit 1746

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